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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,310	01/09/2002	Atsushi Ito	217374US2PCT	7395

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

NGUYEN, KIMNHUNG T

ART UNIT	PAPER NUMBER
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2674

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DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,310

Applicant(s)

ITO ET AL.

Examiner

Kimnhung Nguyen

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Application has been examined. The claims 1-11 are pending. The examination results are as following.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Arimoto (EP 0991051 cited by Applicant).

As per claim 1, AAPA discloses a display panel wherein each display cell is connected to the common electrode and the discrete electrode, the discrete electrode is driven for each display cell and the common electrode is driven in common to plural cells, and display pulses are applied to the common electrode and the application of a positive control voltage by the discrete electrode is controlled for each cell to provide a display, the display pulse of the common electrode and the control voltage of the discrete electrode are produced for each unit panel and provided to each display cell (page 3, lines 16-24). Fig. 19, shows the relationship between the voltage of the common electrode and the discharge in the initialization sequence depicted in fig. 18, the left-hand side is the common electrode and the right-hand side the discrete electrode, the display pulse is formed by a two-step voltage, which increases and decreases in stages, the absolute value of the voltage of a reset pulse may preferably be set above the first-stage voltage

Art Unit: 2674

value of the display pulse and with such a display pulse, it is possible to cause two discharges, i.e. a charge storage discharge and a stored charge removal discharge, by one shot of the display pulse (page 4, lines 10-20). Fig. 18, which is prior art, shows the step of supplying said common electrode with a reset pulse opposite in polarity to said display pulse for the inversion of charges stored on the said electrode. However, the AAPA does not disclose a supplying said common electrode with a first single-step pulse of the same polarity as said display pulse. Arimoto discloses in figures 9 and 11, a common electrode display pulse common electrode with a first single-step pulse of the same polarity as said display pulse (see individual electrode rises when this pulse is inserted for initialization, see paragraph 0047). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a first single-step pulse of the same polarity as said display pulse as taught by Arimo into the system of AAAA because it would for providing a high voltage is necessary and the driving frequency for the individual electrode rises (see paragraph 0047).

As per claim 2, it is well known in the art to utilize successive supply of pulse and it would have been obvious to one of ordinary skill in the art at the time the invention was made to supply successively said common electrode with a single-step pulse having the same polarity as claimed for the same reasons given in claim 1.

As per claims 3-4, and 10-11, it would have been obvious for AAPA discloses in fig. 18 and Arimo's system to have a reset pulse wherein the duration is equal to or smaller than 5 microsecond; the common electrode within 1 microsecond after the rise of first single-step pulse; the reset pulse is approximately 3:1; and the second single-step pulse falls within 1 microsecond after a falling of the first single-step pulse as claimed since such a modification would have

Art Unit: 2674

involved a mere change in the size/range of a system. A change in size/range is generally recognized as being within the level of ordinary skill in the art.

See *In re Rose*, 105 USPQ 237 (CCPA 1995) and

See *In Reven*, 156 USPQ 679 (CCPA 1968).

As per claims 5-6, AAPA discloses a display panel wherein each display cell is connected to the common electrode and the discrete electrode, the discrete electrode is driven for each display cell and the common electrode is driven in common to plural cells, and display pulses are applied to the common electrode and the application of a positive control voltage by the discrete electrode is controlled for each cell to provide a display, the display pulse of the common electrode and the control voltage of the discrete electrode are produced for each unit panel and provided to each display cell (page 3, lines 16-24). AAPA further discloses that positive rise-up timing of the discrete electrode control voltage stops the discharge and the rise up timing of the discrete electrode control voltage is controlled by the 8-bit data in 256 steps. Fig. 19, shows the relationship between the voltage of the common electrode and the discharge in the initialization sequence depicted in fig. 18, the left-hand side is the common electrode and the right-hand side the discrete electrode, the display pulse is formed by a two-step voltage, which increases and decreases in stages, the absolute value of the voltage of a reset pulse may preferably be set above the first-stage voltage value of the display pulse and with such a display pulse, it is possible to cause two discharges, i.e. a charge storage discharge and a stored charge removal discharge, by one shot of the display pulse (page 4, lines 4-20). Furthermore, AAPA disclose at times the voltages of both electrodes are 0 V meaning no voltage is applied to the

Art Unit: 2674

electrodes and no discharge occurs as a result (page 4, line 27 to page 5, line 12). Fig. 18, which is prior art, shows the step of supplying said common electrode with a reset pulse opposite in polarity to said display pulse for the inversion of charges stored on the said electrode.

Regarding claims 7 and 9, the AAPA does not disclose a controlling a period of the gaseous discharge in said one of plural display cells by controlling a period in which to apply said display pulse to the common electrode and in which to apply a discharge suppression pulse to the discrete electrode. Arimoto discloses in figures 12, a plurality of display cells by controlling a period in which to apply said display pulse to the common electrode and in which to apply a discharge suppression pulse to the discrete electrode (see paragraphs 0047 and 0048). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a plurality of display cells by controlling a period in which to apply said display pulse to the common electrode and in which to apply a discharge suppression pulse to the discrete electrode as taught by Arimoto into the system of AAPA of figures 18-19 because this would for providing the rising in driving frequency for the individual electro can be suppressed (paragraph 0047, lines 9-11).

Allowable Subject Matter

3. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The present invention is directed to a display panel wherein each display cell is connected to the common electrode and the discrete electrode, the discrete electrode is driven for each display cell

Art Unit: 2674

and the common electrode is driven in common to plural cells, and display pulses are applied to the common electrode and the application of a positive control voltage by the discrete electrode is controlled for each cell to provide a display. AAPA and Arimoto disclose a similar system. None of the cited art discloses or suggests wherein each display cell is connected to the common electrode and the discrete electrode, the discrete electrode is driven for each display cell and the common electrode is driven in common to plural cells, and display pulses are applied to the common electrode and the application of a positive control voltage by the discrete electrode is controlled for each cell to provide a display. However, they fail to teach a display panel driving method wherein a stabilization period in which not to apply voltages to both of the common electrode and the discrete electrode is set between at least one of the steps (a) and (b), and the steps (b) and (c).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimnhung Nguyen whose telephone number (703) 308-0425.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD A HJERPE** can be reached on (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

Or faxed to:


(703) 872-9314 (for Technology Center 2600 only).

Art Unit: 2674

Hand-delivery response should be brought to: Crystal Park II, 2121 Crystal Drive,
Arlington, VA Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377.

Kimnhung Nguyen
September 9, 2004


RICHARD HJERPE 9/17/04
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600